

The South African Journal *of* Medical Laboratory Technology

ORGAN OF THE SOCIETY OF MEDICAL LABORATORY
TECHNOLOGISTS OF SOUTH AFRICA

Vol. 3, No. 3

A QUARTERLY

June, 1957



EDITOR:
CECIL R. STUART

Single Numbers 5/6

Annual Subscription £1/1/-

**SOCIETY OF MEDICAL LABORATORY TECHNOLOGISTS
OF SOUTH AFRICA**

— o —

President: Dr. J. C. THOMAS

Vice-Presidents:

Prof. J. BARNETSON Prof. I. GORDON
Dr. R. ELSDON-DEW Prof. J. F. MURRAY
Dr. R. TURNER

— o —

COUNCIL

Chairman: Dr. F. A. BRANDT

Mr. J. MAYTHAM Mr. A. SCOTT
Mr. G. TURNER Mr. P. ROUX
Mr. P. N. BUCK Mr. G. C. BUCKLE
General Secretary-Treasurer: Mr. G. W. WIKELEY

— o —

BRANCH SECRETARIES

Natal: Mr. P. N. BUCK **Cape:** Mr. J. MAYTHAM
Southern Transvaal: Mrs. G. TOMLIN

— o —

Editor: CECIL R. STUART

Editorial Committee

Mr. W. G. POWELL Mr. R. HORNER
Mr. J. HERRICK Miss I. E. MULLER
Mr. A. J. S. GREENFIELD



Accuracy

In laboratory work accuracy and perseverance are two principles. Perseverance can only be achieved; accuracy, however, can be obtained.

From our delivery programme:

ZEISS Microscopes for every purpose including two automatic Photo Microscopes and a unique Micro Cine Camera

ZEISS Spectrophotometers, Colorimeters and Polarimeters of most modern design

ZEISS Ophthalmological Instruments and Operating Microscopes

SCHOTT JENAer Glassware of world fame

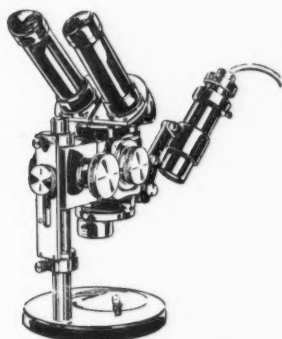
HERAEUS Electrical Laboratory appliances of highest standard

R. JUNG Microtomes for every laboratory

ELLIOTT Tissue Processing Equipment

SPOERHASE Balances of repute

HETTICH Laboratory Centrifuges



ZEISS Stereomicroscope



HERAEUS Crucible furnace

Optical Instruments (Pty.) Ltd., Maritime House, Johannesburg

97a Main Street, P.O. Box 1561 Tel. 34-3980/88/89

Sole ZEISS Representatives for the Union and the Central African Federation.



ARE YOU INTERESTED IN ANIMALS WITHOUT BEING A FANATIC?

Then write for the illustrated prospectus of

UFAW

(The Universities Federation for Animal Welfare)

7a Lamb's Conduit Passage, London, W.C.1

UFAW fosters consideration for the physical and mental comfort of experimental animals, the avoidance of procedures which involve serious suffering, and the development of techniques calculated to reduce discomfort to a minimum.

Publications include:—

The UFAW Handbook on the Care and Management of Laboratory Animals, edited by A. N. Worden, M.A., B.Sc., M.R.C.V.S., F.R.I.C. (Baillière, Tindall & Cox, 31s. 6d.).
Kind Killing, compiled by F. Jean Vinter, M.D., Practical instruction in euthanasia for animals. Enlarged 3rd edition, 6d.

How to Befriend Laboratory Animals, by C. W. Hume, M.C., B.Sc., 3d.
Suggestions for the Legal Protection of Laboratory Animals Overseas, gratis.

ANNUAL MEMBERSHIP FEE: Technicians 5/-; Student Technicians 1/-

SWAB WIRES

★ LARYNGEAL

★ NASAL

★ THROAT

★ UTERINE

All types and descriptions manufactured

Send for Price List and Samples

**MEDICAL WIRE & EQUIPMENT CO.
(BATH) LTD.**

27 Charmouth Road - - Bath, Somerset - - England

Stability!

AMIDST THE SEA OF RISING COSTS CONSIDER GURR'S
RECORD IN MICROSCOPICAL STAIN PRICES.

	1919 list	Current list
Methylene blue 10 g.	2/9	2/6
Leishman stain 5 g.	8/-	3/-

TWO EXAMPLES FROM MANY

Growing demand has enabled us generally to whittle prices—and you have shared the benefit of nearly 40 years.

Please forgive us this dissertation on our own efficiency—Your confidence and support have been vital, have always been appreciated, and will enable us to continue to bring you the best. Our slogan in 1919—“Stipulate Gurr's”—is still the best advice.

Ask for Catalogue E 56



GEORGE T. GURR LTD.

136/138 NEW KINGS ROAD - LONDON, S.W.6

Sole Agents for the Union of South Africa . . . B. Owen Jones Limited

JOHANNESBURG
P.O. Box 9955

CAPE TOWN
P.O. Box 434

DURBAN
P.O. Box 557

STUART JONES & DAVID ANDERSON LTD.

20 QUEEN STREET - DURBAN

•

WE ARE PROUD OF THE FACT THAT WE HAVE SUPPLIED MUCH
OF THE EQUIPMENT NOW IN USE IN THE LABORATORIES OF
THE NATAL PROVINCIAL ADMINISTRATION

*We extend a cordial invitation to visit our showroom at the above
address*

Natal Agents for-

Baird & Tatlock (London) Limited, W. Edwards & Co. (London) Limited,
Hilger & Watts Limited, Hopkin & Williams Limited, Watson & Sons
Limited, George T. Gurr. Limited

DADE REAGENTS, INC.

The standard of excellence the world over for

BLOOD GROUPING AND TYPING SERUMS—The pioneer line of stable, specific, fast-acting serums.

HEMOLET^R—The pioneer sterile, expendable, stainless steel finger puncture lancet.

LAB-TROL^R—The pioneer stable, ready-to-use control solution for blood chemistry tests.

ALBUMIN—Specific, reagent grade albumin made solely for laboratory use.

CATH-URINE^R—Sterile, expendable combination catheter and specimen container.

Other specialty items for **BLOOD BANKS, HOSPITALS AND CLINICAL LABORATORIES.**

PROMPT AIR SHIPMENTS

Suppliers to governments of the United States and many overseas countries.



INQUIRIES INVITED



DADE REAGENTS, INC.

1851 DELAWARE PARKWAY

MIAMI 35, FLORIDA

Phone : NEWton 4-1581

Cables : DRINC-MIAMI

The South African Journal *of* **Medical Laboratory Technology**

ORGAN OF THE SOCIETY OF MEDICAL LABORATORY
TECHNOLOGISTS OF SOUTH AFRICA

Vol. 3, No. 3

A QUARTERLY

June, 1957

CONTENTS

	<i>Page</i>
Editorial	2
Redaksioneel	3
A Simple Medium for the Isolation of Gram Positive Cocci and Clostridia from Mixed Bacterial Flora	4
Readers' Forum	8
A Simplification Device for the Kolmer Haemolysin Dilution Scheme	9
Health Problems Associated with the Jewish Exodus from Egypt	11
The Teaching of Medical Laboratory Technology on a Whole-Time Basis in the Union of South Africa	13
Memorandum to Members	14
Book Review	15
Abstracts	15
Society News	16

SUPPORT THE FIRMS WHO SUPPORT YOUR SOCIETY'S JOURNAL

EDITORIAL

The Society of Medical Laboratory Technologists of South Africa has in common with other organisations of the same type, three main purposes; they are:—

1. To stimulate the interest and to bring together persons of the same profession.
2. To further the academic and professional status of its members.
3. To present a body of sufficient strength to protect and ensure the rights of its members.

In our Society of Technologists the first purpose has, to some extent, succeeded. It would be preferred, however, if greater interest were demonstrated by the majority of its members.

There is a nucleus of members who are successfully working towards the second purpose.

The third is the concern of us all and the matter of this editorial.

We have been told recently that the South African Pharmaceutical Society are putting forward a proposal that their members be permitted to undertake certain clinical laboratory procedures. The reasons given for this move are that if general stores can be permitted to sell proprietary medicines and medical practitioners allowed to dispense medicine, then they should be given licence to practise Medical Laboratory Technology.

Could it be that the persons putting forward a proposal of this sort have, in their profession, been so closely allied to commerce that all they see in this addition to their field is another source of income? If there were no Society or body to protect the interests of technologists and Medical Laboratory Technology, it could well come to pass that you could go into the chemist shop with a specimen and fee and return an hour later for a result.

Whilst this effort on the part of the Pharmaceutical Society could have an adverse effect on technologists if it were allowed to succeed, it may now serve to strengthen the Society of Medical Laboratory Technologists by causing its members to realise the true value of their membership.

REDAKSIONEEL

Die Vereniging van Mediese Laboratorium Tegnoloë van Suid-Afrika het met ander organisasies van dieselfde tipe drie hoof doele in gemeenskap, hulle is:—

1. Om die belangstelling te prikkel en om persone van dieselfde beroep bymekaar te bring.
2. Om die akedemiese en beroeps status van die lede te bevorde.
3. Om 'n liggaam van genoegsame sterkte te hê om die regte van sy lede te beskerm en te verseker.

In ons vereniging van tegnoloë het die eerste doel tot 'n sekere mate geslaag. Dit sal egter verkies word, as 'n groter belangstelling, deur die meerderheid van die lede, getoon word.

Daar is 'n baie klein minderheid van die lede wat suksesvol na die tweede doel streef.

Die derde doel is in belang van ons almal en die doel van die geskrif.

Ons is onlangs meegedeel dat die Suid-Afrikaanse Aptekers vereniging 'n mosie aan lede sal voorstel om hulle lede toe te laat om sekere kliniese laboratorium prosedure te onderneem. Die redes aangegee, met betrekking tot hierdie voorstel is dat as algemene handelaars kan toegelaat word om hierdie medisyne te verkoop en mediese dokters toegelaat word om preskripsies op te maak dan moet hulle 'n lisensie toegeken word om as Mediese Laboratorium Tegnoloë te praktiseer.

Kan dit moontlik wees dat persone wat so iets in hulle beroep kan voorstel, in so 'n noue samewerking met handelsnywerhede is, dat al wat hulle voor oë het 'n verdere bron van inkomste is.

Indien daar geen vereniging of liggaam is om die belange van Tegnoloë te beskerm nie, sal die dag aanbreek wanneer jy net in 'n aptekers winkel met 'n monster en fooi kan instap, en dan 'n uur later terugkom om die resultaat te kry.

Indien die poging van die Aptekers Vereniging 'n teenoorgestelde uitwerking op tegnoloë sal hê as dit slaag, mag dit nou dien om die Vereniging van die Mediese Laboratorium Tegnoloë te versterk deur die lede die ware waarde van hulle lidmaatskap te laat besef.

A SIMPLE MEDIUM FOR THE ISOLATION OF GRAM POSITIVE COCCI AND CLOSTRIDIA FROM MIXED BACTERIAL FLORA

S. E. MADDISON

**Department of Pathology, University of Natal, Durban*

*Present address: Amoebiasis Research Unit, Durban.

The isolation of Gram positive organisms—cocci and clostridia—from blood agar plates in routine diagnostic laboratories is not infrequently time-consuming or impossible due to overgrowth by Gram negative bacilli, including the spreading species of *Proteus*, and the contaminants loosely classified as *B. subtilis*. An attempt has been made to find a simple medium capable of allowing the rapid isolation of the Gram positive organisms. Schaub and Foley (1952) advocate the use of phenylethyl alcohol, potassium tellurite or chloral hydrate in blood sugar and 1% glucose in thioglycollate broth. Heppler (1950) uses ethyl alcohol and sodium azide in blood agar. Stokes (1955) uses increased agar concentration. Lichstein and Snyder (1941) found sodium azide in blood agar satisfactory.

In the hands of the author chloral hydrate, increased agar concentration, alcohols and potassium tellurite when used in concentrations that would allow the growth of Gram positive cocci and clostridia, also allowed the growth of Gram negative bacilli and *subtilis*. These, although spreading was inhibited, overgrew the Gram positive organisms and frequently prevented their isolation in pure culture. Prolonged incubation of glucose-thioglycollate broth cultures failed to kill the Gram negative bacilli.

Lichstein and Snyder (1941) in investigating seven strains of *Proteus* found that sodium azide in a dilution of 1/5000 completely inhibited their growth. Heppler (1950) also uses this dilution. In the investigation described below 1/5000 of sodium azide was found satisfactory for completely inhibiting the growth of *B. subtilis* and Enterobacteriaceae except *Pseudomonas*. The last, however, failed to show any spreading on sodium azide plates.

The sodium azide blood agar is an extremely simple medium and readily available to even the harassed technologist working alone in a country hospital laboratory. To prepare the medium 2ml. of a 1% aqueous solution of sodium azide is added to 100 ml. of blood agar base immediately before or after adding the blood. The plates should be stored in the refrigerator and used within three days of pouring. The inhibitory effect is lost on storage for more than three days. The blood

agar base available for this investigation was dispensed in 400 ml. amounts and to reduce the wastage of sodium azide plates it was found satisfactory to add blood to the base and pour routine blood agar plates from three-quarters of the bottle. Two ml. of 1% sodium azide were then added to the remaining quarter of blood agar in the bottle and the plates poured.

The 1% sodium azide solution was made up at least one day prior to use and added with a sterile pipette. No sterilisation of the solution was found necessary as in making 39 batches of sodium azide blood agar not one plate was contaminated. The solution was stored at room temperature and was stable for at least four months.

TESTING OF MEDIUM WITH FRESHLY ISOLATED STRAINS OF BACTERIA

TABLE I

Results of Cultivation of Overgrowing Bacteria on Sodium Azide Blood Agar

ORGANISM	NO. OF STRAINS TESTED	COMPLETE INHIB. 24 HRS.	COMPLETE INHIB. 48 HRS.
<i>Pr. mirabilis</i>	172	171	134
<i>Pr. vulgaris</i>	32	32	25
<i>B. subtilis</i>	45	45	45
Coliforms	43	43	43
<i>Pr. rettgeri</i>	3	3	3
<i>Pr. morgani</i>	10	10	10

All strains of *Pr. mirabilis*, *Pr. vulgaris* and *B. subtilis* tested spread in varying degrees after 24 hours on routine blood agar; the coliforms, *Pr. rettgeri* and *Pr. morgani* usually overgrow but do not spread. The results of cultivating these organisms on sodium azide blood agar are shown in Table I. It must be stressed that these organisms are merely inhibited by sodium azide. This is clearly shown when 24-hour broth cultures of *Pr. mirabilis* and *Pr. vulgaris* containing inhibitory doses of sodium azide are plated on to routine blood agar. The tubes appear to have no growth but the organisms spread over the plates. When pick-

ing off Gram positive organisms from sodium azide plates the colonies should be taken carefully as far from the reservoir as possible to avoid transfer of the inhibited organisms in subculture or confirmatory tests.

TABLE II
Results of Cultivation of Gram Positive Cocci and Clostridia

ORGANISM	NO. OF STRAINS TESTED	GROWTH 24 HRS.
<i>Streptococci</i> —freshly isolated	100	100
<i>Staphylococci</i> —freshly isolated	72	72
<i>Strep. pneumoniae</i> —freshly isolated ...	5	5
<i>Cl. welchii</i> —freshly isolated	7	7
<i>Cl. welchii</i> —stock strain	2	2
<i>Cl. fallax</i> —stock strain	1	1
<i>Cl. histolyticum</i> —stock strain	1	1
<i>Cl. tetani</i> —stock strain	1	1
<i>Cl. botulinum</i> —stock strain	1	Growth 48 hours

No strains of cocci or clostridia tested failed to grow on sodium azide plates (see Table II). The *Streptococci* colonies were frequently larger than those on a corresponding routine blood agar plate and were invariably surrounded by a zone of brownish haemolysis whether the organism was α -, β - or γ -haemolytic on blood agar. The *Staphylococci* grew as minute whitish colonies after 24 hours' incubation, increasing in size up to 2 mm. after 48 hours. *Strep. pneumoniae* was easily recognisable as the colonies had the typical "draughtsman" appearance.

Of the clostridia available for testing *Cl. welchii* grew well on anaerobic sodium azide plates. The colonies and haemolysis were very similar to those on routine blood agar plates. *Cl. fallax* and *Cl. histolyticum* appeared as very small colonies after 24 hours and showed slight increases in size after 48 hours. *Cl. tetani* grew well with characteristic

spreading after 24 hours. *Cl. botulinum* failed to grow after 24 hours and appeared as minute colonies after 48 hours. The morphology of the clostridia was, however, changed, the organisms usually being extremely filamentous.

PRACTICAL USE OF THE MEDIUM

This was demonstrated in four ways:—

1. Sodium azide cultures were made from the reservoir of routine blood agar cultures showing overgrowth by one or more of the following organisms: *Proteus*, *B. subtilis*, coliforms and *Ps. aeruginosa*. The routine plates had shown Gram positive cocci in stained films from the reservoir but no discrete colonies. From 59 such cultures *Staphylococci*, *Streptococci* or both were isolated in every case.
2. Non-catheter specimens of urine showing a mixture of Gram positive cocci and Gram negative bacilli in a film of the deposit were plated on to both routine blood agar and sodium azide. From a total of 61 specimens Gram positive cocci were isolated from sodium azide but not from routine blood agar in 44 cases.
3. Miscellaneous pus and wound swabs the Gram stain of which indicated that Gram positive cocci might be overgrown by *B. subtilis* or Gram negative bacilli were plated on to both routine blood agar and sodium azide. Of a total of 12 specimens Gram positive cocci were isolated from only the sodium azide plates in five cases. In five cases they were isolated from both routine blood agar and sodium azide and in two cases there was no growth on either blood agar or sodium azide.
4. Initial Robertson's meat cultures were plated on to sodium azide and routine blood agar. These sodium azide plates again facilitated the isolation of Gram positive cocci and were especially useful in isolating clostridia, particularly *Cl. welchii*, from heated Robertson's cultures of pus, stools and post mortem specimens. Mixed cultures of clostridia have easily been separated by this method. It should be noted, however, that the sodium azide plates also support the growth of an as yet unidentified Gram positive bacillus with oval terminal spores. The colonies on aerobic plates are discrete but spreading tends to occur on anaerobic plates. The organism is frequently present in stools and post mortem specimens and makes the isolation of *Cl. tetani* wellnigh impossible.

The results of comparative cultures of throat, vaginal and cervical swabs were disappointing. The various streptococci in throat swabs all showed a similar type of haemolysis on sodium azide and led to endless soluble haemolysin tests. Gram positive cocci from vaginal and cervical swabs are infrequently overgrown by Gram negative bacilli and thus

routine use of sodium azide plates for these specimens is not warranted. In cases of overgrowth the initial blood agar or Robertson's cultures can be subcultured on to sodium azide plates.

SUMMARY

The use of a blood agar medium containing 1/5000 dilution of sodium azide for routine bacteriological investigations is described. It is easily prepared and greatly facilitates the isolation of Gram positive cocci and clostridia in specimens and cultures also containing Enterobacteriaceae and *B. subtilis*.

REFERENCES

- HEPPLER, O. E., 1950, *Manual of Clinical Laboratory Methods*, Charles Thomas, Springfield, Ill.
LICHSTEIN, H. and SNYDER, M., 1941, *J. Bact.*, **42**, 653.
SCHAUB, I. G., and FOLEY, M. K., 1952, *Diagnostic Bacteriology*, Henry Kimpton, London.
STOKES, J. E., 1955, *Clinical Bacteriology*, Edward Arnold, London.

ACKNOWLEDGMENTS

I wish to thank Dr. S. B. Griffiths, formerly of the Department of Pathology, University of Natal, for his interest and advice and also for permission to publish these findings. Miss E. Bennett, of King Edward VIII Hospital Laboratory, kindly supplied specimens and cultures for use in this study.

READERS' FORUM

The Editor,
Sir,

To round off correspondence on the subject may I suggest to Mr. Roux that, a course which is recognised by those who conduct it is by no means the same as a course which is recognised by regulation.

This is not to decry those courses organised by the South African Institute for Medical Research for they have produced some notable graduates, but merely to emphasise that the course at the Natal Technical College was the first organised course in the field of Medical Laboratory Technologists after the promulgation of the rules regarding the Registration of Medical Technologists in September, 1949.

Yours faithfully,

G. W. WIKLEY.

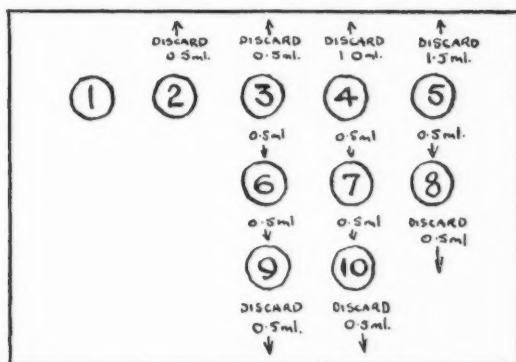
A SIMPLIFICATION DEVICE FOR THE KOLMER HAEMOLYSIN DILUTION SCHEME

G. C. BUCKLE

*Central Pathological Laboratory, Natal Provincial Administration,
Durban*

By Kolmers' scheme for the haemolysin titration, dilutions of 1:1,000, 1:2000, 1:3000, 1:4000, 1:5000, 1:6000, 1:8000, 1:10000, 1:12000 and 1:16000 are made in 0.5 ml. volumes from a 1:1000 master dilution. Although the scheme is most explicitly set out it nevertheless necessitates that the learner must constantly consult the text during the operation and this sometimes leads to confusion. This paper describes a simple device which helps to overcome this problem and which does not constitute a modification to the actual titration technique.

A piece of linoleum or any stiff water-proof material of suitable size is punched with holes as shown on the diagram. The holes must be large enough to fit the size of the tubes and must be spaced to coincide exactly with the holes of the test tube rack.



The linoleum is placed on the rack to coincide with the holes and tubes 1—10 are placed in position as indicated in the diagram. Saline is added in the routine manner as in Table I.

Again in the routine way 0.5 ml. 1:1000 haemolysin is added to each of tubes 1 — 5. At this stage the directions on the linoleum are simply carried out.

TABLE I

TUBE NO.										
	1	2	3	4	5	6	7	8	9	10
Saline solution	none	0.5 ml	1.0 ml	1.5 ml	2.0 ml	0.5 ml	0.5 ml	0.5 ml	0.5 ml	0.5 ml

Starting with tube 5 the contents are mixed, 1.5 ml. is discarded and 0.5 ml. is transferred to tube 8. The contents of tube 8 are mixed and 0.5 ml. is discarded. Then tube 4, 3 and 2 are in turn similarly processed as directed on the linoleum by the arrows. The dilutions now prepared, the linoleum is removed and the tubes may now be placed in line of order for the routine addition of other reagents.

The whole procedure as described above is conveniently carried out with a single 2.0 ml. pipette fitted with a 5.0 ml. bulb and marked off at 0.5 ml. 1.0 ml., 1.5 ml. and 2.0 ml.

Whilst appreciating that once a technologist becomes *au fait* with a technique the necessity for consulting the text falls away, it is felt that even for the expert there is less chance of error using this aid. It also follows the more conventional method of working from the highest dilution to the lowest.

BIG AND LITTLE FLEAS

*Great fleas have little fleas
Upon their backs to bite 'em,
And little fleas have lesser fleas,
And so ad infinitum.
And the great fleas themselves, in turn,
Have greater fleas to go on;
While these again have greater still,
And greater still, and so on.*

AUGUSTUS DE MORGAN (1872).

HEALTH PROBLEMS ASSOCIATED WITH THE JEWISH EXODUS FROM EGYPT

A summary of a lecture given by Dr. P. B. Adamson, Senior Pathologist, Pathological Laboratory Service, Natal Provincial Administration, Durban, to the Natal Branch of the Society.

After a brief historical survey of the Jews up to the time of the Exodus, the numbers of people and animals taking part in that migration were mentioned. The probable rout followed by Moses was mentioned, but only those journeys of the Israelites in the Sinai Peninsula were considered.

The medical aspects of the Exodus and of the sojourn in the Sinai region were considered in greater detail. Although information about conditions of health in the Sinai Peninsula were relatively scarce, legitimate conclusions could be drawn from comparisons between diseases occurring in Egypt and in Palestine, and these in turn could be applied to the region of Sinai. Apart from natural physical hazards which became of paramount importance to nomads—such as fractures, war injuries and lack of water—the wandering tribes had to contend with snakes, flies and locusts. Many diseases were peculiar to humans. Most of the common present-day diseases were found during the pre-Palestinian period of Jewish history, but certain ones were unknown. Syphilis, cholera, kala azar and trypanosomiasis did not occur in this part of the world at the period of history under consideration. A brief survey of the probable diseases specifically mentioned in the Bible was then given.

It was emphasised that nomads lived in very close proximity to their flocks and were dependent to a great degree upon these animals for their own survival. There was therefore a close association between diseases occurring in animals and among Israelites, many diseases being common to both groups. Tuberculosis certainly was well known; plague and Brucellosis were known but probably only occurred sporadically. Infestations by flukes and tapeworms were known. Reasons were advanced to show that Schistosomiasis probably infested dwellers in Egypt and in the Sinai Peninsula, but Taeniasis was limited to the saginata (beef) species in the Sinai regions. Dracontiasis was endemic in the Sinai Peninsula, but was unknown in both Egypt and Palestine at this period of history. Insect pests—ticks, mosquitoes, lice and flies—were of course ubiquitous. Their effects on animals and humans could not be assessed accurately, but they must have been important factors in the spread of disease and thriftlessness among the flocks and herds.

The spread of disease through the Sinai Peninsula was discussed. An influx of large numbers of humans and animals, not "salted" to the local diseases, upset the balance between health and disease in the

Egypto-Sinai region. This was soon adjusted, but a further change in the pattern of disease occurred when the Israelites invaded the Land of Canaan from the Sinai Peninsula.

Finally it was emphasised that concrete facts concerning this Jewish migration were rare and most of the conclusions about hygiene and public health have had to be deduced from indirect evidence. This event in history has provided us with one of the earliest examples of the application of basic principles of hygiene and public health to a large community, but unfortunately details were still lacking in the story described in the Bible.

SELECTED BIBLIOGRAPHY

1. GROLLENBERG, L. H. (1956). *Atlas of the Bible*. Nelson, London.
2. MURRAY, G. W. (1956). *Geograph. Journ.* **122**, 335.
3. KNOX, R. A. (1949). *Old and New Testament in English, Vol. I*. Burns Oates and Washbourne, London.
4. SIGERIST, H. E. (1951). *History of Medicine, Vol. I*. O.U.P.
5. NAPIER, L. E. (1946). *Principles and Practice of Tropical Medicine*. Macmillan, New York.
6. RUHRAH, J. (1932). *Amer. Journ. Dis. Child.* **43**, 195.
7. NAVILLE, E. (1888). *5th Memoir Egypt. Explor. Fund.* Trubner, London.
8. JASTROW, M. (1914). *Proc. Roy. Soc. Med.* **7**, 121.

MICHROME STAINS AND REAGENTS

for Microscopy and Biology

Adonitol	Dextrin	Leishman Stain	Sudan Blue
Arabinose	Field's Stain	May-Grunwald Stain	Sudan 1, 2, 3, & 4
Asparagine	Gelatin	Methyl Red	Thioflavine, T & S
Auramine, O	Giemsa Stain	Peptone	Thionin
Azur 1, 2, B, C, & L	Glucose	Resazurin	Toluidine Blue
Azur 2 Eosin	Haematoxylin	Rosolic Acid	Urease
Beef Extract	Inositol	Sodium Desoxycholate	Vital Red
Brom Phenol Red	Janus Green, B	Sodium Taurocholate	Yeast Extract
Cedarwood Oil	Lacmoid	Sodium Thioglycollate	etc.

Water Soluble Indicators **Buffer Tablets** **Optoil**: synthetic, non-sticky immersion oil

Crystalite and Clearmount: Synthetic, colourless, neutral mountants

Microscopic Stains in tablet form

Water Testing Tablets and Outfits **Stains for fluorescence microscopy**

UNIFORM HIGH QUALITY, RELIABILITY AND IMMEDIATE DELIVERY

55-page Price List of Michrome Stains and Reagents available on request.

EDWARD GURR, LTD.

42 UPPER RICHMOND ROAD WEST, EAST SHEEN, LONDON, S.W.14

Telephone: Prospect 8051 & 7606

Cables: Michromlabs, Put., London

Now ready: "Practical Manual of Medical and Biological Staining Techniques" (2nd edition 460 pages; price 42/-) by Edward Gurr, author of "Microscopic Staining Techniques," Nos. 1, 2 and 3.

THE TEACHING OF MEDICAL LABORATORY TECHNOLOGY ON A WHOLE-TIME BASIS IN THE UNION OF SOUTH AFRICA

G. W. WIKLEY AND J. R. HART

Pathological Laboratory Service, Natal Provincial Administration

In the Union of South Africa there exists, as elsewhere, a shortage of trained medical laboratory technologists capable of maintaining a laboratory in a small, isolated hospital far from the amenities offered by centralised laboratories in the larger towns and cities of the Union.

Part-time courses conducted over the past eight years have failed to solve this problem for two reasons which are inter-related:—

1. The five-year period of training is too long when it is realised that
2. 80% of students presenting for training are nubile females, with the direct consequence that marriage takes a heavy toll, and where a married female technologist returns to work she cannot, for obvious reasons, be sent to an outlying laboratory.

In our opinion the remedies for this are twofold:—

1. Make the financial inducement such that more males are attracted; and
2. Introduce a whole-time course in Medical Laboratory Technology in some suitable centre in the Union.

In this short article we submit a proposal for the introduction of such a course. The scheme which we now present presupposes the formation of a National Board of Control for Medical Laboratory Technology. Discussions which it is hoped will result in the formation of such a Board are now taking place.

Subject to the requirements of such a Board of Control, the course would be under the general control of the Department of Education, Arts and Science, and we feel that a suitable school would be the Natal Technical College, Durban, which is currently building a new School of Pharmacy and Chemical Technology. It would be essential for hostel accommodation to be provided if this school is to serve the whole of the Union.

We appreciate that the cost per student will be rather high but suggest that bursaries awarded by employers of medical laboratory technologists would go a long way towards the provision of suitable candi-

dates for training. The holders of such bursaries would then undertake to serve for a fixed period of time after qualification.

A suitable course, to cover a period of two years' whole-time whole-time instruction could be organised on the following lines:—

(a) *General Introductory Course of 6 months' duration :*

Chemistry and Physics, refresher course	12 weeks
Anatomy and Physiology	10 weeks

The course in Anatomy would cover function rather than detail, and Physiology would include basal metabolism and serve as an introduction to Haematology and Chemical Pathology.

(b) *Professional Course:*

Bacteriology and Serology	18 weeks
Chemical Pathology	16 weeks
Haematology and Blood Transfusion	10 weeks
Histopathological Technique	10 weeks
Parasitology	8 weeks
Public Health Problems and Notifiable Diseases, etc.	3 weeks
Laboratory Animals	1 week
Records and Documentation	1 week
Revision, Examinations, etc.	3 weeks

This would allow for normal Technical College holidays during the course.

Staff: Such a school should have a senior medical technologist as Senior Lecturer or Supervisor of Studies, and lecturers, both medical laboratory technologists and medical men, would be drawn from the laboratories in the area on a part-time basis.

The foregoing scheme, representing the personal views of the authors, is presented in the hope that it will create a new awareness of a problem which, like the poor, is always with us, and help in its resolving.

MEMORANDUM TO MEMBERS

The South African Journal of Medical Laboratory Technology is *your* publication. It is impossible for the Editor to publish a reputable journal unless *you*, the members of this Society, support it by sending as many articles for publication as you are able to produce. There is no such condition as "too many articles"; "too few" and the Journal will wither and die.

Have *you* written *your* article yet?

BOOK REVIEW

"Biological Staining Methods," 6th edition (1957), by George T. Gurr, F.R.I.C., M.B.A.C.

It is now four years since the reprinted 5th edition of this book appeared. The new edition consists of 102 octavo pages, four of these constituting the index and 18 covering a formulary and appendix. At a price of five shillings (five shillings and sixpence, post free) this is a useful book for the technical laboratory worker. The title of the book bears the word "Biological" in larger type than the other two words, and this fact makes the use of this word even more misleading than it would have been had it been in the same size as the remainder of the title. The staining methods appear to apply almost entirely to zoological aspects of biology, and one feels that the emphasis is on human anatomy and pathology. The one botanical item is the staining of bacteria, but even in that section the emphasis is on the applications in zoological pathology.

The medical laboratory technologist will find much of interest in this book, with its formulary of over 160 stains and reagents, 78 pages of staining methods, and five coloured plates, but in any further editions a change of title should be considered.

ABSTRACTS

Experimental and clinical observations on the determination of γ -globulins by the ZnSO_4 turbidity test. Konitzer, K., and Faber, S. (1955) *Z. Ges. Inn. Med.* 10/18 (845-852).

Sera with the same content of γ -globulins give different values in the ZnSO_4 turbidity test according to Kunkel. These differences are ascribed mainly to the influence of albumin and lipids and of the physical inhomogeneity of the precipitated protein. The test is claimed to be specific for γ -globulins and superior to the other flocculation tests.

A micromethod for the estimation of serum bilirubin. Laurence, K. M., and Abbott, A. L. (1955). *J. Clin. Path.* 9/5 (270-273).

A rapid, simple and accurate method for the estimation of bilirubin in small quantities (0.1 ml. or less) of serum or plasma is described. The method is a modification of that of Malloy and Evelyn. It is suitable for use in laboratories equipped with standard photoelectric instruments and has proved valuable, particularly in following the progress of erythroblastotic infants.

SOCIETY NEWS

CAPE BRANCH

The Annual General Meeting was the main item of interest during the past quarter and for the convenience of members a list of office-bearers follows:—

Chairman: Mr. G. Turner.

Hon. Secretary: Mr. J. H. Maytham.

Committee Members: Mr. C. Stewart, Mr. D. Duncan, Mr. N. Constantine, Mr. C. Edwards, Mr. B. Neiteler.

Student Member: Mr. W. Stander, with Miss N. Winch as a co-opted Student Member.

Auditors: Mr. T. Turner and Miss B. Scholtz.

Council Members: Mr. C. Stewart and Mr. J. H. Maytham.

A committee to arrange our Winter Lecture Series was also elected: Miss B. Scholtz, Miss B. Robinson, Mr. C. Edwards and Mr. S. Horne.

Note.—Those members of the Society who are interested in a Society Blazer Pocket Badge are asked to get in touch with Mr. A. Crafford, Department of Pathology, Medical School, Mowbray, Cape. Mr. Crafford has been instrumental in getting a very fine wire badge manufactured at the price of £2 7s. 6d. each.

J. H. MAYTHAM,

Hon. Secretary.

NATAL BRANCH

The Annual General Meeting of the Branch was held on 11th April, 1957, and the following officers were elected for the year:—

Chairman: Mr. A. Scott.

Vice-Chairman: Mr. G. C. Buckle.

Secretary/Treasurer: Mr. P. N. Buck.

Committee Members: Mrs. A. Schriever, Mr. J. L. Herrick, Mr. G. W. Wikeley.

Student Representative: Miss Y. Banning.

Auditors: Mr. J. T. F. Neary, Mr. J. L. Herrick.

VACANCIES

LOCUM TENENS

A locum tenens is required for a period of one year from September, 1957, in the Haematology Department of Groote Schuur Hospital, Cape Town.

The post is that of Senior Technician, the basic salary of which is £750 per annum.

The duties involve the organisation of routine blood investigations, organisation of an anticoagulant (prothrombin) service, and student demonstrations.

Application should be made to:

Miss E. SCHOLTZ,
Haematology Dept.,
Groote Schuur Hospital,
Observatory,
Cape Town.

VACANCIES FOR LABORATORY TECHNICIANS IN THE DEPARTMENT OF MEDICINE, UNIVERSITY OF CAPE TOWN

Applications are invited from males or females for the undermentioned posts for interesting research work in Biochemistry, Endocrinology or Haematology in the Department of Medicine, University of Cape Town and the Groote Schuur Hospital.

Technical Assistant, Grade I £750 x 30 — 810 x 42 — 894

Technical Assistant, Grade II £510 x 30 — 750

Apply—

Professor J. F. BROCK,
Department of Medicine,
University of Cape Town.

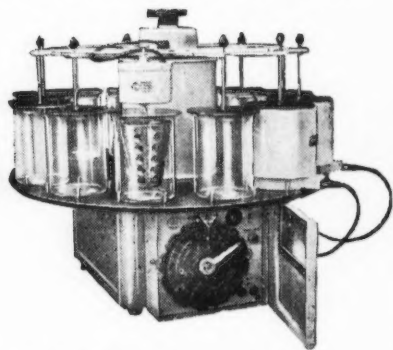


putting it into words

The discoveries and the developments in techniques in medicine as in every other sphere of knowledge rely on the written word for their announcement to the world.

Central News Agency, as the largest distributor of books in the Union, plays a major role in the dispersal of such vital information. The text books YOU need can be obtained at your local C.N.A. shop . . . and should your particular book not be in stock, it can be obtained for you in the quickest time at no extra cost.

M.S.E. HISTOKINETTE



S.A. Agents and Stockists:

MACDONALD ADAMS & Co.

JOHANNESBURG
P.O. Box 68 - Phone 238161

D U R B A N
P.O. Box 1807 - Phone 60888

COOKE, TROUGHTON & SIMMS

*have pleasure
in informing our many friends
that we now operate in South Africa
as*

**Cooke, Troughton & Simms
South Africa (Pty.) Ltd.**



*With our comprehensive
range of microscopes we
now offer apparatus for—*

*Blood cell and particle
counting*

Tissue processing

*High and low power
micromanipulations.*

Full details on application



NOTICE TO CONTRIBUTORS

All contributions are to be addressed to:—
The Editor, The South African Journal of
Medical Laboratory Technology, Room 213,
Dept. of Pathology, Medical School, Umbilo
Road, Durban.

Contributions may be written in English
or Afrikaans, and should preferably be typed
in double-spacing on foolscap sheets on one
side of the paper only.

Figures should be drawn in Indian ink, and
all figures and tables should be labelled as such
(e.g. Figure 1, Table 1, etc.).

Authors should make adequate references to
previous works on their subjects. These
should be set out as follows:—Author's surname
and initials of Christian names; the year of
publication (in parentheses); the name of the
journal, which should be abbreviated according
to the World List of Scientific Periodicals (see
below); the volume number (underlined); and
the first page reference.

Example:—Moron, I. B. (1960). J.
unsuccess. Med., 20, 99. References to books
should give the author's name and initials,
the year of publication, title of book, name
of publisher, and town in which published.

References should be arranged in alphabetical
order of the authors' surnames. If more than
one work by the same author is listed, these
should appear in chronological order.

Technologists are reminded that regulations
demand that all original articles of a technical
or scientific nature must be approved by the
heads of their departments before being sub-
mitted for publication.

Title abbreviations according to World List of Scientific periodicals

All nouns commence with capital letters, and
adjectives small letters. Articles, conjunctions
and prepositions are omitted.

Examples:—
J. Amer. med. Ass. S. Afr. J. clin. Sci.
Lancet Stain Tech.
Amer. J. clin. Path. J. Bact.

REPRINTS AND PHOTOGRAPHS

If requested before publication, 24 reprints
of original articles will be supplied free to
contributors. As a temporary measure, con-
tributors are asked to defray the costs of
publishing diagrams and photographs accom-
panying articles.

KENNISGEWING AAN INSENDERS

Alle bydrae moet as gevolg geadresseer word:
Die Edeur, Die Suid Afrikaanse Joernal van
Mediese Technologie, Kamer 213, Dept. van
Patologie, Mediese Skool, Umbiloweg, Durban,
Natal.

Bydrae mag in Engels of Afrikaans geskryf
word en moet verkieslik getik wees dubbel
spasering op folio-papier en net op een kant
van die vel.

Figure moet in Indiese ink geteken word en
alle figure en tabelle moet geëtiket word as
sulks (b.v. Figuur 1, Tabel 1, ens.).

Auteurs moet voldoende referensies gee tot
vorige werke oor hulle onderwerpe. Die moet
as volg uiteengesit word:—Auteur se familie-
naam en voorletters; die jaar van uitgawe (in
hakies); die naam van die Joernaal, wat moet
verkort volgens die Wêreld Lys van Wetenskap-
like Tydskrifte (sien hieronder) die volume
nommer (onderstreep); en die eerste pagina
referensie.

Voorbeeld:—Moron, I. B. (1960). J.
unsuccess. Med., 20, 99. Referensies tot boeke
moet die auteur se naam en voorletters meld,
die jaar van uitgawe, titel van boek, naam van
uitgewer, en stad waar dit gepubliseer is.

Referensies moet in alfabetiese orde, volgens
auteurs se familie-naam gerangskik word. Indien
meer dan een werk deur dieselfde auteur gemeld
word, moet dit in tydsorde voorkom.

Tegnoloë word daaraan herinner dat regulasies
vereis dat alle oorspronklike artikels van tegniese
of wetenskaplike aard moet die goedkeuring dra
van hulle departementale hoofde voor dit
ingestuur word vir publikasie.

Titel verkortings volgens Wêreld Lys van Wetenskaplike Tydskrifte

Alle selfstandige naamwoorde moet begin
met hoofletters en byvoeglike naamwoorde met
klein letters. Artikels, verbindings, en voor-
setsels word uitgelaat.

Voorbeelde:—
J. Amer. med. Ass. S. Afr. J. clin. Sci.
Lancet Stain Tech.
Amer. J. clin. Path. J. Bact.

HERDRUKKE EN FOTOGRAWE

Indien aanvraag ingedien word voor publi-
sering, sal 24 herdrukke van oorspronklike
artikels vry aan bydraers verskaf word. As
in tydelike maatregel word bydraers gevra om die
koste van publisering van fotos en tekeninge
wat saam met artikels gaan sell te betaal.

Ladies are to be admitted



"The 'Female Physicians' question, thanks to Professor Masson, has made a great stride during the past week. Ladies are to be admitted to study Medicine at Edinburgh University. Imagine the feelings of the non-contents when Professor Masson, in a final outburst, described their argumentation as 'rampageous mysticism, dashed with drivel from Anacreon!'"
(Nature, 1869, 1, i, 25)

In 1869 scientific clinical methods were nearly as unpopular as women doctors. Today men and women work together in clinical, bacteriological and pathological laboratories all over the world; and in more than seventy countries regard the products of the B.D.H. Laboratory Chemicals Group with equal favour.

B.D.H. LABORATORY CHEMICALS

THE BRITISH DRUG HOUSES LTD. B.D.H. LABORATORY CHEMICALS GROUP POOLE ENGLAND

Agents in South Africa: MACDONALD ADAMS & CO., JOHANNESBURG and DURBAN

SAF/LC/13

When you want to control OEDEMA
think first of . . .



Diamox*

Acetazolamide Lederle

A nonmercurial oral diuretic. Acts by inhibiting the enzyme carbonic anhydrase. Produces prompt, ample diuresis lasting from six to twelve hours. Morning dosage allows an uninterrupted night's sleep. Well-suited to long-term use. Nontoxic.

The most widely prescribed drug of its kind!

Indicated in cardiac oedema, epilepsy, acute glaucoma, pre-menstrual tension, oedema associated with toxæmia of pregnancy and oedema caused by certain types of electrolytic imbalance. Offered in scored tablets of 250 mg. for oral use.

PACKED IN BOTTLES OF 25 AND 100

* Regd. Trade Mark

LEDERLE LABORATORIES DIVISION

AMERICAN CYANAMID COMPANY

PEARL RIVER NEW YORK



Sole South African Distributors:

ALEX LIPWORTH LIMITED

JOHANNESBURG

CAPE TOWN

DURBAN

